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EXAMINER

ALIE, GHASSEM

ART UNIT	PAPER NUMBER
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3724

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Please find below and/or attached an Office communication concerning this application or proceeding.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oestricher (2,425,388) in view of Nicholson (3,596,317), and in further view of Brown (4,559,800). Regarding claim 1, Oestricher teaches a trim press that travels between a load position in which a cutting edge 19 is spaced from a striker plate 15 and a cutting position in which the cutting edge 19 confronts the striker plate 15. Oestricher also teaches a die 14 for cutting a thermoformed plastic article from a sheet 10' of thermoformable plastic. Oestricher also teaches that the die includes a knife element 18, 19 that has a cutting edge 19 for serving the thermoformable plastic sheet 10' when the knife element 18, 19 confronts the striker plate 15. Oestricher also teaches a band heater 25 in contact with knife element 18, 19 for heating the knife element. It should be noted that the header covers the circumferential area of the blade 18, 19 as shown in Figs. 9 and 10. See Figs. 1-10 and col. 3, lines 34-47 in Oestricher. Oestricher does not teach that trim press including a die building up plate that is mounted to the first platen and the band heater 25 is adhered to the knife element 18, 19. However, the use of a trim press including a die building up plate that is mounted to the first platen is well known in the art such as taught by Nicholson. Nicholson teaches a trim press including a die 56 mounted to a die builds up plate 64 which is mounted to a first platen 68. See Fig. 2 in Nicholson. It would have been obvious to a person of ordinary skill in the art to

provide Oestricher's trim press with the build up plate and the first platen, as taught by Nicholson, in order to enable the operator to adjustably mount the die to the trim press and facilitate the replacement of the die. Oestricher in view of Nicholson does not teach that the band heater 25 is adhered to the knife element 18, 19. However, the use of band heater that is adhered to a heat conductive material is well known in the art such as taught by Brawn. Brawn teaches a heater bond 50 adhered to a substantial portion of the perimeter of a heat conductive element 40. See Figs. 1-3 and col. 4, lines 31-46 and col. 5, lines 15-26 in Brown. It would have been obvious to a person of ordinary skill in the art to provide Oestricher's trim press apparatus, as modified by Nicholson, with the adhered band heater, as taught by Brown, in order to provide the knife with a the heater that can be easily configured to the shaped of the knife and a heater that has a negligible weight which does not impede the normal operation of the knife.

Regarding claim 4, Oestricher, as modified above, teaches everything noted above including a die travel stop 21 that mounted to the die build up plate, as taught by Nicholson, that limits travel of the trim press by engaging a feature on the striker plate 15 when the trim press moves beyond the cutting position. See Fig. 4 in Oestricher.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oestricher in view of Nicholson and Brown, as applied to claim 1, and in further view of Harcuba et al. (4,051,754), hereinafter Harcuba. Regarding claim 3, Oestricher teaches everything noted above except a thermocouple for measuring a temperature of the knife element and a temperature control module for controlling the heater based on the measure temperature.

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However, the use of the thermocouple for measuring the temperature of a knife in a trim press is well known in the art such as taught by Harcuba. Harcuba teaches a thermocouple 17 for measuring a temperature of a knife element and a temperature control module for controlling the heater based on the measured temperature to maintain the knife element 2, 3 within a range of desired temperature. See Fig. 1 and col. 2, lines 11-25. The thermostat 17 functions the same as the thermocouple and measures and regulates the temperature between the blade and the heater 7. In addition, the use of thermocouple for measuring the temperature of the blade and a temperature control module for controlling the temperature of the heater and the knife element is well known in the art such as taught by Smith et al. (5,451,288), hereinafter Smith. Smith teaches a thermocouple 14 connected to a knife element 25, 26 and a temperature control module 85. See Figs. 1-8 and col. 9, lines 47-65 in Smith. Brown also teaches that a thermocouple-controlled power source may be for controlling the temperature of the heater band. See col. 5, lines 15-26. It would have been obvious to a person of ordinary skill in the art to provide Oestricher's trim press, as modified above, with a thermocouple, as taught by Harcuba, in order to control the temperature of the knife.

4. Claims 1, 3-7, 26-32, and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keyser et al. (4,844,852), hereinafter Keyser, in view of Nicholson and in further view of Scalora (3,240,851). Regarding claim 1, Keyser teaches a trim press that travels between a load position in which a cutting edge 46 is spaced from a striker plate 28 and a cutting position in which the cutting edge 46 confronts the striker plate 28. Keyser also teaches a die 26 for cutting a thermoformed plastic article 20 from a sheet 18 of

thermoformable plastic. Keyser also teaches that the die includes a knife element that has a cutting edge 46 for serving the thermoformable plastic sheet 18 when the knife element confronts the striker plate 28.

Keyser does not teach that trim press including a die building up plate that is mounted to the first platen. However, the use of a trim press including a die building up plate that is mounted to the first platen is well known in the art such as taught by Nicholson. Nicholson teaches a trim press having a die 56 mounted to a die builds up plate 64, which is mounted to a first platen 68. See Fig. 2 in Nicholson. It would have been obvious to a person of ordinary skill in the art to provide Keyser's trim press with the build up plate and the first platen, as taught by Nicholson, in order to enable the operator to adjustably mount the die to the trim press and facilitate the replacement of the die.

Keyser also does not teach a band heater adhere to the knife element for heating the knife element. However, Scalora teaches a band heater 61 adhere to a knife element 60 of a die. See Figs. 1-6 and col. 3, lines 50-75 and col. 4, lines 1-22 in Scalora. It should be noted that the band heater 61 is tightly secured to the knife element 60. Scalora does not teach explicitly that the band heater is adhered to the knife element. However, Official notice is taken that the use of adhesive to connect a band heater to a plate or a conductive member is old and well known in the art as is evident in Brown. It would have been obvious to a person of ordinary skill in the art to provide Keyser's trim press, as modified by Nicholson, with the band heater, as taught by Scalora, in order to heat the blade and create a clean cut in the thermoformable plastic sheet.

Regarding claim 3, Keyser, as modified by Scalora, teaches everything noted above, but Keyser, as modified by Scalora, does not explicitly teach a thermocouple. However, Scalora teaches that the temperature of the knife 60 is set up in a way that the thermoplastic material does not adhere to the knife. There is obviously a thermocouple that regulates the temperature. In addition, the use of thermocouple for measuring the temperature of a knife is well known in the art such as taught by Harcuba and Brown.

Regarding claims 4 and 5, Keyser, as modified above, teaches everything noted above including a die travel stop 48 that mounted to the die build up plate, as taught by Nicholson, that limits travel of the trim press by engaging a feature 42, 54 on the striker plate 15 when the trim press moves beyond the cutting position. See Fig. 5 in Keyser. Keyser also teaches that the die travel stop is a post.

Regarding claims 6 and 26, Keyser, as modified by Nicholson, teaches everything noted above including a die board 58 movably mounted to the die build up plate 64 that is movable within a range of positions along a first plane generally parallel to the sheet of thermoformable plastic and defined by the die build up plate and wherein the knife element 56 is fixed to the die board 58. See Fig. 2 in Nicholson. Keyser also teaches a die location pilot 48 connected to the die board that engages a registration feature 42 associated with the plastic article 18 such that when the trim press is in cutting position the registration feature 42 co-acts with the location pilot to move the die board relative to the die build up plate along the first plane such that the knife element is placed in a predetermined cutting alignment with respect to the plastic article 20. See Fig. 58 in Keyser.

Regarding claim 7, Keyser teaches everything noted above including that the pilot is a post has a generally conical protrusion that engages a conical recess 42 on the plastic sheet 18 and the opposite pin 54 to guide the knife element into the predetermined cutting position. Keyser does not teach that the post 48 has a conical recess and the plastic and the pin on die 28 has a conical protrusion. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make a conical recess in the pilot post and a protrusion on the plastic sheet and pin 54, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Regarding claims 27 and 28, Keyser, as modified above, teaches everything in claims 1, 3, and 6. In addition Keyser as modified above, teaches a pair of power leads 62 connected to the band heater 61. Keyser, as modified above, also teaches a feed back system, which a thermocouple, to regulate the temperature of the knife element. The power to the power leased inherently is increased and decreased according to the variation in the temperature. In addition, the use of thermocouple connected to a pair of power leads for regulating the temperature of the knife or a die cutter is well known in the art such as taught by Smith et al. (5,451,288). Smith teaches a thermocouple 14 coupled to a pair of power leads 12, 13. Smith also teaches that the temperature of the cutting edge 25 of the die 20 is regulated by the thermocouple. See Figs. 1-7 and col. 9, lines 42-65.

Regarding claims 29-32, Keyser, as modified above, teaches everything in claims 3-6.

Regarding claims 34-38, Keyser, as modified above, teaches everything in claims 1, and 4-6.

5. Claims 8 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keyser in view of Nicholson and Scalora, as applied to claims 6 and 31, and in further view of Carll (2,313,801). Regarding claims 8 and 33, Keyser, as modified above, teaches everything noted above except that the die board has a plurality of mounting holes that are oversized with respect to mounting posts on the die build up plate such that when the die board is mounted to the die build up plate the die board can slide on the die build up plate within the range defined by the oversized holes. Carll teaches a die board 16 (which is a segmented die board) having a plurality of mounting holes 26 that are oversized with respect to mounting posts on the die build up plate 50 such that when the die board 16 is mounted to the die build up plate 50 and the die board 16 can slide on the die build up plate 50 within the range defined by the oversized holes 36. See Figs. 1-3 in Carll. It would have been obvious to a person of ordinary skill in the art to provide Keyser's trim press apparatus, as modified above, with the oversized holes on the die board as taught by Carll or Whistler in order to adjust the knife element with respect to the die build up plate.

Response to Amendment

6. Applicant's arguments with respect to claims 1, 3-8, and 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ghassem Alie whose telephone number is (571) 272-4501. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, SEE <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (too-free).

GA/ga

June 8, 2006



**BOYER D. ASHLEY
SUPERVISORY PATENT EXAMINER**